

Abstract of the Disclosure

This invention relates to the enhancement of chemical reactions by applying a high frequency electric field to a material. The frequency and amplitude of the electric field are selected in accordance with the properties of the reacting components in the bulk of chemical reactor. In general, the high frequency range is determined by the dielectric properties of reactant(s), that is, at any given temperature, when, for example, the specific conductivity starts to grow from its low frequency value. Typically, frequencies in the range of 100 kHz to 200 MHz or greater are suitable for the enhancement of the reactions. An electric field of any shape having Fourier components that when applied to a chemical process exhibits growth in the real part of conductivity relative to the low frequency value is of particular importance.